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ABSTRACT

This manual contains a work sample intended to assess a handicapped student's ability to move the fingers and manipulate small objects with the fingers, rapidly and accurately. Section 1 describes the assessment and lists related occupations and DOT codes. Instructions to the evaluator are provided in the next section. The conditions and administration equipment are detailed, and the set-up and breakdown procedures are illustrated. The section on administration provides a student orientation including student material with an explanation and illustration of equipment and/or procedures. Instructions for task procedures actions to be taken, as well as post sample interview topics are also covered. Section 4 explains the method of scoring and provides forms. Section 5 lists technical data (norms, reliability, validity) to be included in a supplement to this manual. Contents of the section on maintenance and construction include information on tool and equipment maintenance and a materials list (equipment, source, price). Section 7 cites references. An appendix defines terms. (YLB)

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FINGER DEXTERITY

Work Sample

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I. INTRODUCTION

A. Assessment Description

The Finger Dexterity Work Sample is intended to assess a students ability to move the fingers, and manipulate small objects with the fingers, rapidly and accurately. The work performed and worker trait groups section do not apply to the isolated trait work sample.

B. Related Occupations

Related Occupations	DOT Code
ORGANIST	152.041-010
SURGEON	070.101-094
COIL WINDER, HAND (ELECTRONICS)	724.684-026
WATCH REPAIRER	715.281-010
FILE CLERK	206.362-010
OPTICAL INSTRUMENT ASSEMBLER	711.381-010
MAGICIAN	159.041-010
ASSEMBLER , SMALL PARTS	706.684-022
ASSEMBLER, CLOCK AND WATCH	715.381-010
ENGRAVER, HARD AND SOFT METALS	704.381-030
PACKAGER, HAND	920.587-018
SEWING MACHINE OPERATOR	787.682-062

II. INSTRUCTIONS TO THE EVALUATOR

A. Work Sample Conditions

The Finger Dexterity Work Sample is to be administered indoors with only moderate noise from adjacent areas, and good overhead bench lighting. The sample can be done by a one or a two armed person from a chair or wheelchair.

The sample is not physically hazardous in any way and does not require special safety equipment, although precautions regarding Safety and Health requirements should be adhered to.

B. Administration Equipment

The following equipment is required prior to administration.

Evaluator Equipment:

- Manual for Finger Dexterity Work Sample
- Task Observation Sheet
- Stop Watch

Student Equipment:

- Finger Dexterity Work Sample

C. Set-up and Breakdown

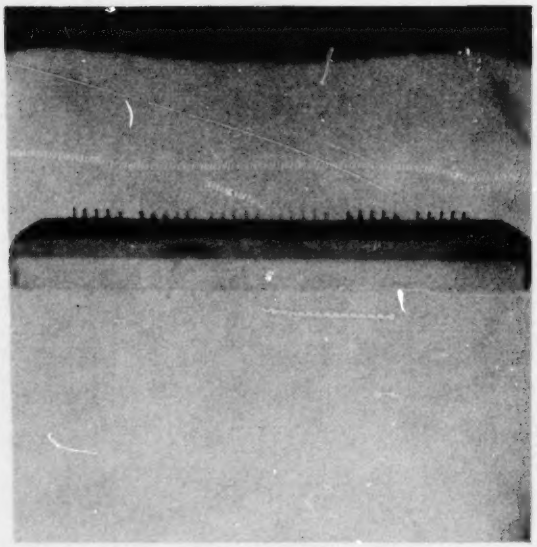
An illustration of the correct set-up and breakdown procedures for the Finger Dexterity Work Sample is shown in the following pages.

Correct set-up for start of work

The pegging board is placed on a table or desk in front of the student. All pegs are randomly scattered in front of the board, and on the table. While giving instructions and pointing out work the evaluator stands to the side of the work unit so as not to interfere with the students view of the work sample.

No alterations are required for left-handed or wheelchair students.

Fig. 2



Work Sample Properly Completed

When the sample is completed, the instructor inspects the board for presence of the number of nails or pegs in the appropriate side of the board.

Timing Procedures:

The sample is timed from the moment the student signifies he understands the instructions and picks up the first peg or nail until he places the last peg or nail in the last hole and signifies that he is finished.

Quality Checks:

Quality is checked by counting the number of nails placed in their proper position on the board.

III. ADMINISTRATION

A. Student Orientation

Read or paraphrase the following information to the student.

> The work sample that you are about to do is called the Finger Dexterity Work Sample.
> The work you will be doing will be like the work done in many industries, including watch assembly, jewelry assembly, electronic minature fabrication and others.
> On this work sample you will move the colored nails from where they are to the holes on the uncolored side of the pegging board.
> I'll show you how to do the work in a minute, but first do you have any questions?

B. *Instructions and Demonstration*

Sighted Population

Statement	*Action*
Pick-up each nail and place it in a hole on the uncolored side of the board.	*Point to the holes in the uncolored side of the board.*
When you have finished, call me and say " I'm finished". Do you understand the instructions? Go ahead and begin.	

Reassembly is not necessary since the color co-ordination Work Sample will be administered next, with the pegs in their present position in the pegging board.

Post Sample Interview Topics

1. Like or dislike for the tasks.

2. Additional information about work fields in which finger dexterity is important.

IV. SCORING

A. Explanations

1. Method of scoring

Productivity will be judged by the time taken to complete all tasks.

Quality will be assessed by the total number of errors.

2. Work performance factors to be observed:

- Student is able to follow verbal directions.
- Student has sufficient dexterity to perform the tasks.
- Student's eyesight is such that he can complete the work sample.

B. Forms

1. Task observation record.

School _____

FINGER DEXTERITY WORK SAMPLE

Task Observation Record

Critical Errors

_____ 1. Does not pick up peg and place it in hole in the board.

Observational explanations for 1.

Task Quality Errors

None

Put additional comments and observations below.

_____ Critical errors

_____ Task quality error

_____ Min _____ Sec Total time

_____ Date taken

_____ Evaluator

_____ Student

V. TECHNICAL DATA

A supplement to this manual is being developed at the time of this printing. It will include:

1. Norms
2. Reliability, test-retest studies
3. Validity
   a. Content validity - established through the Course Analysis based on methods suggested by U. S. Dept. of Labor Analysis techniques.
   b. Predictive Validity
      To be established through follow-up studies of students previously tested.

VI. MAINTENANCE AND CONSTRUCTION

A. Maintenance

After each administration evaluator should see that all pegs are returned to the board on the non-colored side.

B. Materials List

Equipment	Source	Price
Cribbage Board	Discount Store	$1.98
1 box #18/1" brads	Tewksbury Hardware 853 Main Street Tewksbury, Mass.	.75

Note: Most comprehensive high school shops have patterns for a cribbage board and will have students make one for the school. Brads are generally available from the same source.

VII. REFERENCES

Korn, T. (ed.) A Work Sample Style Manual. Interface No. 10. Menomonic, WI.: Research and Training Center, University of Wisconsin - Stout, 1976.

United States Department of Labor, Dictionary of Occupational Titles, 3rd Edition. Washington, D. C.: United States Government Printing Office, 1965.

Handbook for Analyzing Jobs, Washington, D. C.: United States Government Printing Office, 1972.

Occupational Outlook Handbook, 1970-71 Edition. Washington, D. C.: United States Government Printing Office, 1970.

Definition of Terms

GED - Is the general level of learning and reasoning acquired through schools, experience and self study. There are six GED difficulty levels, ranging from (6) the most difficult to (1) the simplest.

SVP - Is the special vocational preparation and training in terms of the total time required to prepare for an occupation. It ranges from SVP 1, short demonstrations only, to SVP 9, over ten years.

APT - Refers to aptitudes, which is the quickness and ease with which you can learn to do something. Aptitude definitions are included on a separate page in this manual.

WA - Work Activities:

1. Dealing with things and objects.
2. Involving business contacts.
3. Of a routine, definite, organized nature.
4. Involving direct personal contact to help or instruct others.
5. Resulting in recognition or appreciation from others.
6. Involving the communication of ideas and information.
7. Of a scientific and technical nature.
8. Involving creative thing.
9. Involving processes, methods or machines.
10. Involving working on or producing things.

WS - Work situations are the conditions under which the work involved in any occupation takes place. There are ten types described and they have been related to the 66 Worker Trait Groups in the Guide for Occupational Exploration. They are:

1. Performing duties which change frequently.
2. Performing duties of a routine nature.
3. Planning and directing an entire activity.
4. Dealing with people.
5. Influencing peoples opinions, attitudes, and judgements.
6. Working under pressure.
7. Making decisions using personal judgement.
8. Making decisions using standards that can be measured or checked.
9. Interpreting and expressing feelings, ideas, or facts.
10. Working within precise limits or standards.

PD - Physical Demands are the physical requirements of an occupation and are described in six areas as follows:

1. Lifting, carrying, pushing and/or pulling.
2. Climbing and/or balancing.
3. Stooping, kneeling, crouching, and/or crawling.
4. Reaching, handling, fingering, and/or feeling.
5. Talking and/or hearing.
6. Seeing.

WC - Working Conditions are the physical surroundings of a worker in a job. The DOL lists six different types as follows:

1. Inside or outside.
2. Extremes of cold plus temperature changes.
3. Extremes of heat plus temperature changes.
4. Wet and humid.
5. Noise and vibrations.
6. Hazards.

Aptitudes are rated on a scale of 1 - Highest to 5 - Lowest as follows:

1 - Top 10% of the population
2 - Top third not including the top 10%
3 - Middle third of the population
4 - Lowest third not including lowest 10%
5 - Lowest 10%

The following are the definitions of the aptitudes:

G - General Learning Ability - The ability to "catch on" or understand instructions and underlying principles; the ability to reason and make judgements. Closely related to doing well in school.

V - Verbal Aptitude - The ability to understand meaning of words, and to use them effectively. The ability to comprehend language, to understand relationships between words and to understand meaning of whole sentences and paragraphs.

N - Numerical Aptitude - Ability to perform arithmetic operations quickly and accurately.

S - Spatial Aptitude - Ability to think visually of geometric forms and to comprehend the two-dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space.

P - Form Perception - Ability to perceive pertinent detail in objects or in pictorial or graphic materials. Ability to make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q - Clerical Perception - Ability to perceive pertinent detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation. A measure of speed of perception which is required in many industrial jobs even when the job does not have verbal or numerical content.

K - Motor Coordination - Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and swiftly.

F - Finger Dexterity - Ability to move the fingers, and manipulate small objects with the fingers, rapidly and accurately.

M - Manual Dexterity - Ability to move the hands easily and skillfully. Ability to work with the hands in placing and turning motions.

MR - Mechanical Reasoning - The ability to understand mechanical principles (pulleys, gears, etc)

E - Eye-Hand-Foot Coordination - Moving the hands and feet together in response to visual signals or observations.

C - Color Discrimination - Seeing likenesses or differences in colors or shades. Identifying or matching certain colors. Selecting colors which go well together.